

(Demo) Annual Narrative



FWSANV-0195

Malheur National Wildlife Refuge

Burns, Oregon

Narrative Report for period of January 1 to April 30, 1950

Roster of Regular Personnel

John C. Scharff	Superintendent
Ray C. Erickson	Biologist
Marselle Leake	Supt. of Construction
Kenneth W. House	Refuge Mechanic
Alfred S. Ludi	Refuge Maintenance Man
Gladys V. Howe	Clerk
Albert Olofson	Refuge Maintenance Man
Judd A. Wise	Refuge Maintenance Man
Noel L. Cagle	Refuge Maintenance Man
Frank McElhone	Refuge Maintenance Man
John Porter	Laborer-Patrolman

Temporary Personnel

Elmer Ash	Dragline Operator
Lynn Comegys	Oiler
Fred Huskey	Laborer
Jack Cohoe	Laborer
DeForest Thompson	Laborer
John A. Younger	Laborer

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Malheur National Wildlife Refuge
First Period Narrative Report
January 1 to April 30, 1950

I GENERAL

A. Weather Conditions.

Weather information recorded at the official weather station at refuge headquarters during the four-months' period of this report is as follows:

	<u>Precipitation</u>	<u>Max. temp.</u>	<u>Min. temp.</u>
January	.95	55	-16
February	.58	58	-12
March	.88	66	13
April	.22	77	18
Totals	<u>2.63</u>	<u>77</u>	<u>-16</u>

Precipitation records for the P-Ranch, Diamond and Double-O stations during the period are as follows:

	<u>P- Ranch</u>	<u>Diamond</u>	<u>Double O</u>
January	1.23	1.09	—
February	.24	.27	.19
March	2.30	2.01	.56
April	.37	.34	.15
Totals	<u>4.14</u>	<u>3.71</u>	<u>.90</u>

The stationing of regular personnel at the Double-O Ranch has permitted the re-establishment on February 1, 1950, of a weather station in that area near the Double-O Ranch buildings, to be attended by Refuge Maintenance Man Judd A. Wise. The four weather stations currently in operation are located to give good coverage of weather conditions throughout the Malheur Refuge.

Comparisons of weather data for 1950 and 1949, respectively, are as follows: 2.63 inches to .91 inches of rainfall; maximum temperatures, both 77 degrees Fahrenheit; minimum temperatures, -16 and -26 degrees Fahrenheit. It can be seen that only a small part of the total precipitation for the four months fell during April. Consequently, grass growth has been greatly retarded, both in the meadows and in the higher surrounding land. This lack of forage has reflected itself in a reduced number of snow geese and Canada geese using the refuge and much smaller concentrations of geese to be seen at any time. Strong winds, mainly from the western quarter, and cold weather have been the main factors in accelerating water loss and inhibiting plant growth.

B. Water Conditions.

Although the ice on Malheur Lake became unsafe for travelling afoot in trapping during the last half of January, trappers were not forced off the lake by "rotten" ice until February 14, and the break-up began about a week later. The first gage reading at the mouth of the Blitzen River in Malheur Lake on March 24 was 4092.56 feet above sea level, slightly more than one foot greater than the last previous gage reading of 4091.40 taken on November 15, 1949. A reading taken on April 20, 1950 of 4092.36 feet above sea level revealed a decline of .20 feet. This loss was mainly due to breaching of Cole Island Dike to avoid the flooding of private lands to the west. No water from Malheur Lake has reached the Narrows to date this year.

The annual water forecast meeting was held in Burns on April 4 by personnel of Cooperative Snow Measurement of the State of Oregon. A flow of 66,000 acre feet of water was forecast for the Silvies River, while 65,000 acre feet was predicted for the Blitzen River. The average annual flows of these streams, respectively, are 90,200 and 63,100 acre feet of water. No run-off records are available for the Silver Creek drainage, but the greatest discharge of water since the acquisition of the Double-O Ranch Unit now is passing through that area filling to capacity all of the recently completed impoundments.

Until the middle of February Steens Mt. appeared to have little snow on its slopes, but heavy snows of late February and March blanketed the mountain and adjacent uplands. The annual snow course records taken this year on March 28-29 on Steens Mt. follow:

	<u>Steens Mt. - 7000' Elev.</u>		<u>Fish Cr. - 8,000' Elev.</u>	
	<u>Snow</u>	<u>Water</u>	<u>Snow</u>	<u>Water</u>
Highest record	64.75	19.43	94.5	35.2
Lowest record	21.4	8.4	47.3	16.0
10-year average	37.0	13.0	67.9	23.8
1950	41.6	15.0	81.0	24.2

Although the data indicate that the prospects are good for a better-than-average flow from Steens Mt. this year, the Blitzen River is very low. Most of the snow has disappeared from the slopes below about the 6500' level except on northward exposures and many of the higher ridges are bare. Consequently, it is expected that 1950 will have only a slightly, if at all, better flow of water than 1949.

C. Fires.

The refuge was exceedingly dry and vulnerable to the danger of fires during April, but no accidental fires were reported on the refuge. Controlled burning of over two sections in Unit 8 was accomplished towards improving the grazing capacity through elimination of brush and encouragement of grass domination. One rancher in the Diamond Valley on private land lost control of a stubble fire which destroyed a stack containing 78 tons of hay.

II WILDLIFE

A. Migratory Birds.

1. Populations and Behavior.

The dry weather during April and reduced acreage of water in the marsh lands of the Harney Basin did not attract average numbers of waterfowl. Lesser snow geese were conspicuously few in number and were late in arriving. Some early water from the Silvies River provided feeding and loafing areas for many waterfowl to the north and east of Burns and large numbers of snow geese were encountered in the flats near Buchanan.

Whistling swan. An average number of swans migrated through the refuge during the period, though they were slightly later than usual. No dead swans were seen this year. A half-dozen wintered on the open springs near headquarters and on the Double-O Ranch unit.

Trumpeter swan. On February 23, fifteen of the remaining eighteen trumpeters at Malheur were moved to the newly completed Double-O Ranch swan enclosure. Seven of these were males and eight were females. One male and two females were left on Sod House spring pond. A large male constantly "fought" the fence and eventually succumbed to injuries on its neck where it wore a hole through the skin. All remaining swans appear to be in good condition. The swans quickly paired upon their release in the new enclosure and the pairs withdrew from the rest of the flock, but by the close of the period had shown no inclination toward nesting.

Geese. Only about 25 Canada geese wintered on the refuge, and the spring arrivals were about ten days later than during 1949. In like manner, the appearance of broods has been late and only one group of eight goslings, probably a compound brood, was seen before the end of the period on April 28.

Lesser snow geese were especially slow in arriving at Malheur this year and concentrations of this species did not appear until about March 10. White-fronts were slightly more common than usual and as in 1949 remained longer.

Ducks. Pintails again showed increases over the low number of spring migrants seen in 1947 and 1948. Ruddy ducks seemed to have declined substantially, and all other species of ducks showed little change from the numbers seen in 1949.

Because of the late migration, it is difficult to make a comparison of nesting duck populations with those of 1949, as many migrants still are around. The only nesting species showing indications of a change is the ruddy duck which seems to be here in only about three-fourths of its 1949 numbers.

Sandhill crane. Most of the sandhill crane migrants arrived late and local breeding birds soon became detached from the large flocks and could be seen in isolated marshy areas where they later may be expected to nest. Many migrants still were present in the Grain Camp and P-Ranch areas at the close of the period. At this time, several pairs gave indication that they already were nesting.

American coot. During February and April many emaciated coots were encountered around some of the spring-fed ponds, a large number of them unable to fly. As more green food became available in late April, fewer thin coots were found. The status of migrant and resident coots has not changed appreciably from that of last season.

Shorebirds and waders. There was little change in the numbers of killdeers, avocets and stilts from those of the previous spring, but very few dowitchers, greater yellow-legs and Wilson's phalaropes have been seen so far this year. The egrets and herons are about as abundant, but no nesting colonies had been noted prior to the close of the period. All three species of resident gulls are present. Forster's terns are just beginning to be common, and black and Caspian terns have not yet been seen. Both sora and Virginia rails have been heard, but neither of them has been seen this year.

Other waterfowl. Again grebes have been slow in appearing and pied-billed grebes have not yet been seen. Western and eared grebes still are arriving. Most resident cormorants and pelicans are present and it is hoped that a systematic search of the lake by air this year may reveal a pelican nesting colony.

2. Food and Cover.

Although Malheur Lake supported an unusually heavy muskrat population during the winter, the hardstem bulrush cover survived the trapping season in excellent condition, and the present pattern of cover--water interspersation seems to leave little to be desired toward improvement. The abundant muskrat houses should provide more than enough nesting and loafing situations for geese and other water birds.

Cole Island Dike vegetation has remained in good condition and grazing removed a small part of the potential nesting cover, though most of the vegetation was practically untouched. If enough water to flood the borrow pits to the east of the dike becomes available, a fair nesting population on this structure may be expected.

The responses of marsh vegetation to burning late in March, 1949 in Unit 9 have been appraised. In general, the reaction of most involved non-woody plants seems to have been an acceleration of growth. With the courser emergent species such as hardstem bulrush, cat-tail and bur-reed, the succeeding growth became even more impenetrable and no obvious benefits of burning could be seen.

Burning of the adjacent brush land, however, seemed to release this higher ground to domination by palatable grasses and livestock forage on this are improved somewhat. It is believed that this marsh will continue to be closed in nature until it can be impounded to a greater depth by increasing the elevation of the spillway outlet. In addition to opening much of the currently closed marsh, this also would provide deeper pools and encourage the growth of desirable submergent plants.

A similar controlled burning of refuge land was accomplished in Unit 8 this year on March 31 involving about 1500 acres of meadow and brush land. A slight breeze was blowing from the northwest and nearly all of the marsh and much of the sagebrush, rabbit-brush and greasewood burned where it was dense or where a grass understory could carry the fire. It is expected that the grass should increase following burning and that both waterfowl nesting and livestock forage conditions should improve.

Work on a new impoundment in the dense marsh north of Frenchglen was completed during the period and water was turned into this area. The dirt-moving work consisted of about 70,000 yards of dike and borrow pit and about 200 acres of marsh will be flooded to depths varying from about five feet at the lower (north) end to a few inches at the upper end. Most of the impoundment has been dominated by bulrush, cat-tail and bur-reed. As water is available in the West Canal in this locality throughout the year, it is intended to maintain the level of this pond at a desirable level in order to furnish a brood-rearing impoundment to serve neighboring parts of Unit 2.

Additional diking work with a dragline is being performed in Unit 4, connecting the West Canal dike with the Center Canal dike. By this means, a large pond will be created in the middle of the rather unproductive Unit 4 marsh. Both this impoundment and the preceding one will be closely watched in order to appraise their value to waterfowl and they may furnish usable ideas for further improvement of closed sloughs and marshes in the Britzen Valley and in Diamond Valley.

3. Botulism, lead poisoning and other sickness.

Except for two drake mallards found with typical sarcosporidia infestation, no sickness of any kind was noted among local waterfowl this spring.

4. Banding.

The following birds were banded on Malheur Refuge during the past four months: Trumpeter swan, 3; common mallard, 127; prairie falcon, 1.

B. Upland Game Birds.

1. Populations and Behavior.

Ring-necked pheasants. Since for a number of years the sex

ratio of pheasants in the Blitzen Valley has been heavily in favor of the females, permission was obtained to remove up to 500 for transplanting elsewhere in the State. Trapping was commenced on January 25 and was terminated by March 6. Although scant snow conditions were not conducive to successful trapping, a total of 277 pheasants were removed from that part of the Blitzen Valley to the south of Krumbo Lane including administrative units 1 through 4. The sex ratio of captured birds ran about 3 cocks to each hen. The eight traps used in the project were constructed with 2" mesh chicken wire with V-shaped openings and they were baited with wheat and barley. Considerable trouble with deer and livestock damage to the traps was experienced, and several golden eagles harassed both trapped and untrapped pheasants, in part responsible for the loss of 11 pheasants in the traps.

Another factor preventing a larger catch of pheasants was the presence of mallards in the traps which seemed to discourage entry by pheasants. One hundred twenty-seven mallards were banded during the pheasant-trapping operations, and most of these ducks were consistent "repeaters" at the feeding stations. Consequently, the traps had to be visited at least four times a day in order to empty the traps of ducks and encourage the entry of pheasants. The Oregon State Game Commission, represented by Mr. Norman Minnick, provided the equipment and undertook the trapping of the pheasants and grain was supplied by the refuge.

Since hunting is not permitted in the Blitzen Valley Units where a great surplus of cocks occurs and where most of the pheasants are produced each year on the refuge, it appears that an annual removal of about 500 cocks for distribution elsewhere in this region would provide a means not only of harvesting these surplus birds but also of obtaining a more favorable sex ratio among the birds remaining to breed.

Valley Quail. The number of quail occupying the refuge and adjacent slopes is similar to last year's population, and most habitat suitable to the propagation of quail now is occupied by this species.

Sage grouse. The relatively open winter permitted sage hens to remain in the short sage uplands and very few resorted to the more protected Blitzen Valley during the period.

C. Big Game Animals.

1. Antelope. In contrast with the unusually common appearance of antelope on the refuge during the first four months of 1949, only an occasional antelope or very small band was encountered on the area this year. As with the sage grouse, the lack of deep snows throughout most of the winter enabled antelope to remain at higher elevations.
2. Mule deer. Though the winter was not severe, the spring was dry and the shortage of green grass and browse resulted in the starvation of many yearling fawns. This condition was rather

general throughout the Harney Basin as reported by ranchers and State biologists. Most deer left the refuge by the 25th of March, but apparently quite a few does returned late in April and were seen commonly around the P-Ranch.

D. Fur Animals, Predators, Rodents and other Mammals.

Musk rats. The muskrat harvest during the past two winters was attended with many difficulties so that it was not possible to take even the minimum permitted number of furs. Although untoward weather and ice conditions were very frustrating to the trappers, a slightly earlier start enabled them to trap the greatest number of furs taken on refuge-owned lands since this sanctuary was established. A total of 16,825 muskrats and two minks were trapped during the regular season, November 15, 1949 through February 15, 1950, under eight trapping permits on Malheur Lake. Seventy-nine additional muskrats were taken in the Blitzen Valley and Double-O Ranch units, giving a total of 16,904 muskrats for the Malheur Refuge compared with 8,936 in 1947-48 and 10,811 for the 1948-49 trapping seasons. The pelts sold by the trapping permittees averaged \$.75 which was considerably below the average return of \$1.25 for the 1948-49 season. The only returns on the sale of refuge pelts received thus far were for a shipment of 562 fall pelts which averaged \$.68. Additional information on the trapping season is presented under Section V.

Beaver. The employment of a Refuge Trapping Inspector during the 1949-50 trapping season not only expedited the prompt collection of furs from the trappers, but permitted the harvest of 14 beavers during the colder months when these mammals seemed to be quite inactive. After the termination of this appointment, Refuge Maintenance Man Albert Olofson continued trapping beavers and by the end of March the total catch was 34. Most of these animals were taken in areas where beaver activity was interfering with the proper distribution of water or where they had undermined dikes and weakened other water-control structures. It is believed that with the removal of a similar number of beavers each year that their population will be kept at a desirable level.

Mink. A permit for trapping in the Blitzen Units this year provided for the trapping of all mink possible since this predator during the last three years has seriously increased its activity in some of the better nesting areas of the Valley. The permittee caught 124 mink and averaged \$11.93 per pelt of his share of 62 furs. Returns from the sale of refuge mink pelts have not been received.

Although the trapper was very systematic in obtaining nearly every mink whose "sign" he encountered and no evidence of minks was seen during January and February, by the end of the period mink "sign" again was becoming common along many of the watercourses of the Blitzen Valley. The small size of the tracks indicated that a predominance of females now exists and that trapper's catch consisted largely of the more active males during the winter.

A permittee trapper on the Double-O Ranch unit caught six minks during the season and for his three pelts, received an average of \$12.67. Although a large proportion of the Blitzen Valley pelts were "paper-skinned" those from the Double-O area were heavily furred and thick skinned.

Raccoon. Ten raccoon were taken on the Blitzen Valley trapping permit, and the trapper's share of five pelts brought an average of \$.50 per pelt. The low price of this type of fur is not sufficient inducement to encourage their harvest by trappers, although their numbers have increased yearly, and they may eventually become a more important predator on nesting waterfowl.

Coyote. The numbers of coyotes wintering on or near the refuge increased this year, but by the end of the period few were encountered.

Bobcat. About ten bobcats were shot and trapped on the refuge during the past four months. They are about as numerous as during last winter but no predation on waterfowl by this predator has been observed. Of interest was an attack by a bobcat on a mule deer observed by Superintendent Scharff and Mrs. Scharff during a drive one evening along a county road about 8 miles west of Diamond, and more fully reported upon under VII Other Items.

Porcupine. By fencing early in the fall porcupine damage was held to a minimum this year. About 50 porcupines were killed in the Blitzen Valley by members of the refuge staff which seemed to make a slight, apparent difference in their numbers but many still are encountered.

Other species. Large numbers of black-tailed jackrabbits again congregated in the hay meadow and on the grounds around the various refuge stations. Had the winter been as severe and accompanied by as much snow as that of 1948-49, the concentration of rabbits probably would have been much greater. The large number of rabbit ears brought in for the nickel bounty per pair depleted the bounty fund for Harney County long before winter had passed.

E. Predaceous Birds, including Crows, Ravens and Magpies.

As with the coyote population, ravens in the refuge vicinity were much more common than during this period last year and the numbers nesting have also increased. Attention devoted to rabbit-poisoning work by members of the Division of Predatory Animal and Rodent Control in late winter seemed to have been made at the sacrifice of coyote (and raven) control which may have accounted for a greater winter survival of these two predators.

Crows and magpies are about as abundant as they were last year. Some magpie eggs already had hatched by April 30.

F. Fish.

A number of plantings of legal-sized and smaller rainbow trout have been made on the refuge during the latter part of this period. Two plantings of legal size rainbow of 6,000 and 1,600 were made near the Page Dam in the Blitzen River and one planting of 10,000 fingerlings from the Hagerman, Idaho, Federal Hatchery. These plantings should improve the general angling conditions on the Blitzen River.

III REFUGE DEVELOPMENT & MAINTENANCE

A. Physical Development:

The forepart of the period was quite inactive in the field because of the general weather conditions. Advantage was taken of the time insofar as possible to do equipment repair and other inside work.

Soil and Moisture Program.

Under Soil and Moisture work at the Double-O nothing was accomplished other than repairing the structures which were worked upon last season and about sixty yards of riprap hauled and placed about these structures. Quite a number of old structures were repaired during 1949 and eleven of these were damaged by the little real early water in this area before the frost was entirely out of the ground.

Dragline Project, Job 4962.

The dragline crew moved a total of 15,250 yards of dirt for the short time they were able to work. A 24" culvert with gate was installed for an outlet in the pond constructed near Frenchglen and some sixty yards of riprap hauled for dike and structure protection.

Equipment and Repair Work Accomplished.

The R-2 caterpillar tractor was given a valve job and a complete new set of track plates were installed.

The 40 caterpillar tractor was given a valve and ring job.

International pickup, I-18172, was given a complete major overhaul.

Buick sedan, I-18281, was given a good overhaul but owing to the age and past use of this vehicle it cannot be expected to be a dependable unit for any period of time without the expenditure of a considerable sum of funds.

Kohler light plant No. 117500 which was received from the War Assets Administration was given a complete overhaul and taken to the Dufurrena station of the Sheldon Refuge and installed for a standby plant.

A harrow cart was constructed for use with eight sections of spike tooth harrow and this piece of equipment has already demonstrated its worth in the farming operation. Messrs. Leake and Cagle are to be commended for this work since it will effect quite a saving in both funds and time.

Buildings Repaired.

In the carpenter department in addition to the regular maintenance of stoves, furnaces, and buildings the following jobs were accomplished:

Tool cabinets were provided in the carpenter shop. A 700 gallon capacity water trough was constructed and installed in the Little Sagebrush Field for use of cattle wintering in that area. Resident buildings were weatherstripped at the P-Ranch and Refuge Headquarters. The Frenchglen Hotel was wired for electricity, partially painted inside, and tile laid on the living room-dining room floor.

A new septic tank was provided at the Springer House. This dwelling was kemptened in the kitchen, dining room, living room and bath and the woodwork was painted throughout. The work being done on the house proper was a temporary nature as it will be necessary to completely rehabilitate this dwelling before it can be occupied permanently. The work done was to place this house in shape for the temporary occupancy of Mechanic House.

Firtex was provided on the bedroom of one of the apartments where the paper had become cracked and required replacing. A concrete base was provided for the flamo cabinet at the Superintendent's residence. Some painting was done both inside and outside to various dwellings during the period.

The office was painted inside and new shades provided which was the first redecorating done since construction.

Other Repair Work and Construction.

Three miles of fire guard was constructed in Unit 8 of the Blitzen Valley for use in burning some brush and grassland and for future use in the event of summer or fall fires in this vicinity. It is the plan to construct more of this type of guard as time will permit.

One-half mile of dike was constructed to protect Suicide Swamp from water so that it could be farmed. A bad drying wind was encountered at the time of burning and it later became necessary to flood the area to extinguish the fire, which will postpone the season of farming this new area for a time. The backward season, however, will somewhat offset the period of farming.

Sixty-five yards of cinders were hauled on the Headquarters roads during the month of February. This was in connection with the building development in the old CCC camp area.

One new fourteen foot bridge was constructed in Unit 7. The east boundary fence of the Double-0 Unit was started but no part was completed by the close of the period. The right-of-way clearing was largely done, about one-half mile of posts were set, holes were dug for another mile and considerable materials had been hauled to the site of construction. This job is being worked upon sort of between other jobs and water manipulation on the area.

A feed box and fence style was provided in connection with the new swan pen at the Double-0.

The corrals and loading chute at the P-Ranch were repaired and rebuilt and some inside work was done on the P-Ranch barn.

Refuge-owned colts were broken to lead and one three year old gelding was broken to ride. This is an exceptionally nice colt, and it is planned to use him on this area.

The annual property inventory was taken during March.

A complete overhaul of the Headquarters water pump was accomplished during the latter part of the report period. It now appears necessary that a larger pump be installed with the increased use of the four families located at the old CCC camp location.

Considerable time was required on maintenance of the refuge telephone line system. Perhaps a half mile of stubs were replaced in aggregate. The local supply of telephone stubs provided about ten years ago is just about exhausted and another source of supply will of necessity have to be provided in the near future.

B. Plantings.

Cultivated Crops.

The weather conditions during the current period were such that all spring work was delayed and no exception in this case was the farming activity. It was late before the start could be made and progress has been hampered by continual wind and storm. By the end of the period 124 acres of rye, 80 acres of clover and brome grass, 88 acres of wheat and 52 acres of oats have been seeded. Owing to the uncertainty of water conditions about Malheur Lake no attempt will be made for planting any grain in this particular area this season. We appreciate the importance of grain planting in this unit of the refuge, but little can be accomplished along this line until some definite control of the water can be exercised.

IV ECONOMIC USE OF REFUGE

A. Grazing.

The latter part of the winter was quite rigorous for grazing stock but in most instances following some storms during March, conditions improved on dry feed and generally livestock on the refuge wintered quite well. By the end of the period very little spring grass was in evidence in the foothill area, and it was quite late before livestock men were able to turn their stock on to spring ranges. Generally, stock remained for a longer period of time on the refuge and in some cases amendments were issued on permits where it was possible for stockmen to feed their cattle on controlled areas within the refuge boundaries subsequent to April 1. More concentrates were fed in conjunction with winter grazing in the past season than for any previous winter and pasture was utilized to a better advantage by virtue of this fact. Only a minor portion of the refuge lands were irrigated by the close of the period but ample water seems in store for a normal amount this season.

V FIELD INVESTIGATION OR APPLIED RESEARCH

A. Progress Report.

1. Major Projects.

A. Determination of responses of waterfowl to various agricultural practices on the Malheur Refuge.

(Separate report under preparation which will be abstracted in the next Narrative Report)

B. Evaluation of present utilization of various habitats by waterfowl and an investigation of methods which might be employed to increase this use. (New projects, no information yet to report).

C. Trumpeter swan project.

Much of the information regarding the Malheur trumpeters already has been covered in various memoranda and in a previous section of this report. The Double-O Ranch swan enclosure was completed late in January and during favorable weather on February 23, fifteen of the remaining trumpeters were moved from Sod House Spring to the new enclosure.

The potential emergent nesting cover is wide-leaved cat-tail and occurs as marginal stands in the more sheltered coves of the undulating shoreline of the pond. Sago pondweed, elodea, and an undetermined alga comprised most of the submergent vegetation.

The flats surrounding the pond are grown with greasewood and lesser quantities of desert saltbush and tall sagebrush and one area is largely sodded with saltgrass. The swans spend much of their time on the shores and among the greasewood during the day but remain on the water most of the night.

D. Muskrat management and the fur harvest.

Despite unfavorable trapping conditions, 16,904 muskrats were taken by trappers on the Malheur Refuge during the past winter, over 6,000 more than were taken last year. The fur appeared lower in grade compared with that taken last year. The proportion of "paper-skins and small pelts was high, and during the last month of the season, damage to trapped animals was so severe that many muskrats had to be discarded, indicating that the untrapped population still was great. Trapping concentrated on the areas where much of the vegetation had been destroyed during last summer and fall seems to have brought these local surpluses under control, though 20,000 muskrats could easily have been taken without undesirable results had additional trappers been available. In addition to the muskrats trapped on the refuge-owned land, a property owner reports having taken 2621 muskrats and two minks and receiving an average of \$.955 per animal. It seems likely that the price paid for the furs is an exaggeration in view of the uniformly lower returns of all other trappers on Malheur Lake. If the reported catch for this private land is true, the total muskrat catch for Malheur Lake during the 1949-50 trapping season would be 19,525 animals.

The lake emergent plant cover survived the winter in excellent condition and shows about optimum interspersions of cover and water. It appears that a heavy population density of muskrats may be necessary in order to maintain the desired interspersions, for in the peripheral areas where muskrats have been evicted by freezing during the past three winters, much of the cover is getting too dense for use by waterfowl. This condition is practically unavoidable, however, for no control over Malheur Lake levels can be exerted, and the freezing-out of muskrats is largely dependent upon weather and ice each winter. Except for a sparsity of muskrats in the shallower parts of Malheur Lake, a spring population seems to have survived in desirable numbers to breed.

VI PUBLIC RELATIONS

A. General.

Unfavorable weather conditions precluded the usual number of spring visitors, but even though, considerable interest was displayed by the general public in the refuge.

On April 15-17 Professor Lee Kuhn and 24 game management students from Oregon State College toured the refuge as a part

of their course in wildlife management. Refuge Biologist Erickson spent considerable time in the field with this group, and I am sure they profited by their experience. This trip is an annual event for the wildlife management graduation class of the Oregon State College.

On March 9 Circuit Judge Carl E. Wimberley and Carl Thornton of Roseburg paid the refuge a brief visit.

On March 18 the Harney County Chamber of Commerce Secretary Woolley and a group visited the area but owing to adverse weather conditions were unable to see very much of the refuge.

On April 8, George Brinlow a free-lance writer who is preparing a history of Harney County and Archie McGowan, local business man and promoter of the project, spent the day on the refuge particularly from the standpoint of history connected with the area.

B. Refuge Visitors.

Official visitors and those of special note during the period included the following:

February 8	James O. Harris and James B. Appling both of Burns visited the refuge in connection with a report to the effect that birds were starving in the general vicinity.
January 20	Elmo G. Adams, Refuge Manager, Hart Mt. Refuge, Lakeview, Oregon
March 15-17	Robert Smith, Flyway Biologist, Klamath Falls, Oregon, and Dave Munro, Vancouver, B. C.
March 23	Elmo G. Adams & Refuge Maintenance Man Fisher, Hart Mt. Refuge, Lakeview, Oregon
April 12	Thos. Campbell, Bureau of Land Management, Burns, Oregon.

C. Refuge Participation.

On January 2 refuge personnel participated in the annual Xmas bird census and 42 species were recorded at that time.

During the period assistance was rendered State Biologists Minnick and Mason in trapping and removing from the refuge of 277 ring-necked pheasants for planting elsewhere.

On January 18 a bait-mixing demonstration was put on by E. C. Stoneman and Nelson of the Predator & Rodent Control Division for refuge personnel and neighboring ranchers.

On February 18 refuge biologist Erickson gave a talk to the Harney County Chamber of Commerce on the reported starvation of waterfowl on Malheur Refuge and vicinity.

On March 28 and 29 refuge biologist Erickson and oiler Comegys cooperated with the State Snow Survey organization in securing snow measurements on the two courses on Steens Mt.

On April 13 Mr. Erickson gave a talk on items of interest at a tourist school being conducted in Burns.

VII OTHER ITEMS

A. Items of Interest.

From March 6-8 refuge biologist Erickson attended the 15th North American Wildlife Conference in San Francisco.

L. E. Oster who has been stationed at the P-Ranch station for the past five years as Refuge Maintenance Man transferred to the Predator and Rodent Control Division effective April 30.

On April 27 the refuge personnel gave a farewell party to Mr. Oster and his family which was held in the old mess hall of the Sod House CCC camp.

During the period April 13-18 refuge Superintendent Scharff made a trip to the Bison Range at Moiese, Montana, and had an excellent opportunity to see this refuge and work being done at that location.

On April 4, Superintendent Scharff attended the annual water forecast meeting which was held in Burns by the Soil Conservation Service and other interested organizations.

On February 7 Superintendent Scharff was in the Regional Office discussing matters of administrative interest.

On January 24 and March 27 Izaak Walton League meetings were attended by the refuge Superintendent.

On January 31 a meeting of all refuge personnel to discuss plans, reports, etc., was held, but was only partially attended because of the extreme weather conditions which made it impossible for some members to be present.

On January 25 a new Jeep pickup was received at Boise, Idaho.

On March 20 Noel L. Cagle was added to the refuge staff as Refuge Maintenance Man CPC-6 and will be stationed at the Buena Vista station. Mr. Cagle will operate the semi-trailer unit on a region wide basis from this refuge.

During the period of January 3 to January 5 an R-5 tractor and bulldozer was transferred to Stillwater Refuge.

A load of seed grain was hauled from Tulalake refuge to Malheur refuge during February 15-17.

During the period of February 21-27 Mr. Cagle made a trip as far south as Las Vegas, Nevada, hauling miscellaneous equipment and materials on a region-wide basis.

From March 8-31 Mr. Cagle spent the entire period hauling equipment and war surplus stock in Nevada, California and Oregon.

On March 22, 1950, about 9:00 p.m. Superintendent Scharff and Mrs. Scharff were returning home from Diamond Valley by car. The night was clear with a pale moon in the west and some frost was on the ground, the temperature being 25 at the Olofson place some fifteen or twenty minutes previous.

Paralleling the South Diamond Swamp is a low rim with scattered large boulders near the flat. As we made a turn in the road the glare of our lights on an eye was noted at some distance and naturally we kept looking, endeavoring to make out the animal as Mrs. Scharff had remarked that it looked like a cat eye. When the place came into the light of the car we were startled to see a deer prone on its right side with a large bobcat sitting on its side just in front of the hip bone and very industriously trying to break into the left flank. I stopped the car as soon as possible throwing it into reverse, cramping it in such a manner that the lights were full on the deer and cat not over fifty feet away. The cat at first would sort of cringe down on the deer but was reluctant to leave. I hastily grabbed a flashlight from the glove compartment remarking that I would examine the carcass for a fresh kill. As I stepped out of the car the cat slinked away through the surface boulders, and when I next looked at the deer it was lying in a natural position blinking into the lights of the car. It arose to its feet with no apparent effort, bounding away as if it had no injury whatsoever. I was able to get a good clear look at its flank at about forty feet with the aid of the flashlight and could see no injury. The hair about the hip bone where the cat had been sitting was somewhat rumpled. No blood was in evidence anywhere on the ground.

I would judge the deer to be a coming two-year-old and it appeared to be in good flesh and stout. We were able to see it in motion for seven or eight bounds. The remarkable thing to me was the fact that the deer was lying there with the cat endeavoring to open up its flank and making no apparent protest. The deer evidently was conscious as it immediately raised its head as observed by Mrs. Scharff when the cat's weight was removed.

Submitted May 11, 1950

J. C. Scharif, Superintendent



D-7 Tractor and disk plow during farming operations.



Dragline stripping of peat soil showing yardage to be handled in dike construction work.



Longhorn Steers



Group of Game Management Students from
Oregon State College on field trip.



Swan pen at Double-O. Upper picture looking south, lower looking north from head of spring.





Drill and harrow cart shown in farming.



Harrow cart with eight sections of harrow.



New impoundment north of Frenchglen
showing P-Ranch in background.



Dragline operating in West Swamp.

WATERFOWL

Refuge Malheur Months of January to April 1945

(1) Species	(2) First Seen		(3) Peak Concentration		(4) Last Seen		(5) Young Produced		(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Broods Seen	Estimated Total	Estimated for Period
I. <u>Swans:</u>									
Whistling swan	6	wintered	3,500	3/20	50	4/30			6,000
Trumpeter Swan	17	captives							17
II. <u>Geese:</u>									
Canada goose	25	wintered	15,000	4/1	common	resident			35,000
Cackling goose	25	1/20	800	2/25	3	4/8			1,500
Brant									
White-fronted goose	30	1/20	500	3/25	100	4/30			2,500
Snow goose	150	2/20	18,000	3/20	150	4/30			45,000
Blue goose									
III. <u>Ducks:</u>									
Mallard	1,000	wintered	26,000	4/7	abundant	resident			65,000
Black duck									
Gadwall	30	"	25,000	4/30	"	"			35,000
Baldpate	40	"	12,000	4/10	occasional	"			30,000
Pintail	20	"	25,000	4/5	common	"			65,000
Green-winged teal	12	"	12,000	4/15	"	4/30			18,000
Blue-winged teal	2	4/16	50	4/20	rare	resident			200
Cinnamon teal	2	3/11	12,000	4/30	common	"			22,000
Shoveller	6	3/2	15,000	4/25	"	"			16,000
Wood duck	1	4/9							
Redhead	4	wintered	15,000	4/30	"	"			20,000
Ring-necked duck	8	"	800	4/1					2,000
Canvas-back	1	2/15	8,000	4/3	occasional	"			18,000
Scaup	10	wintered	12,000	4/1	"	"			35,000
Golden-eye	50	"	600	3/25					2,000
Buffle-head	2	"	5,000	4/20					20,000
Ruddy duck	5	"	6,000	4/30	common	"			8,000
Am. Merganser	5	"	100	4/15	rare	"			200
IV. <u>Coot:</u>	30	"	148,550 150,000	4/20	abundant	"			250,000

SUMMARIES

Total Production:

Geese _____

Ducks _____

Coots _____

Total waterfowl usage during period 696,517

Peak waterfowl numbers 300,000

Areas used by concentrations Malheur Lake, Double O Unit,
and Blitzen Valley.

Principal nesting areas this season (goose)

~~Huskrat lodges and dikes, Malheur Lake, Blitzen Valley~~

Reported by _____

R. C. Erickson, Biologist

INSTRUCTIONS

- (1) Species: In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance.
- (2) First Seen: The first refuge record for the species during the season concerned in the reporting period, and the number seen. This column does not apply to resident species.
- (3) Peak Concentration: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge ~~record~~ for the species during the season concerned in the reporting period.
- (5) Young Produced: Estimated number of young produced based on observations and actual counts on representative breeding areas. Brood counts should be made on two or more areas aggregating 10% of the breeding habitat. Estimates having no basis in fact should be omitted.
- (6) Total: Estimated total number of the species using the refuge during the period. This figure may or may not be more than that used for peak concentrations, depending upon the nature of the migrational movement.

Note: Only columns applicable to the reporting period should be used. It is desirable that the Summaries receive careful attention since these data are necessarily based on an analysis of the rest of the form.

MIGRATORY BIRDS
(other than waterfowl)

Refuge Mulheir Months of January to April 194 50

(1) Species	(2) First Seen		(3) Peak Numbers		(4) Last Seen		(5) Production			(6) Total
Common Name	Number	Date	Number	Date	Number	Date	Number Colonies	Total # Nests	Total Young	Estimated Number
I. <u>Water and Marsh Birds:</u>										
Eared grebe	2	4/16	10,000	4/30	resident					13,000
Western grebe			1,000	"	"					2,000
White pelican	2	1/22	200	"	"					200
Farallon cormorant			350	"	"					450
Treganza's heron	winter resident		300	"	"					450
American egret	"	"	250	"	"					275
Brewster's egret	common	4/16	60	"	"					60
Black-crowned night heron	"	4/16	500	"	"					800
American bittern	2	4/30	150	"	"					250
Sora rail			common	"	"					
Virginia rail	1	4/16	"	"	"					
Sandhill crane	2	2/17	325	4/25	"					600
II. <u>Shorebirds, Gulls and Terns:</u>										
Killdeer	1	2/23	2,000	4/22	resident					5,000
Long-billed curlew	3	3/12	400	4/28	"					1,200
Western Willet	common	4/12	10	4/30	"					200
Dowitcher				4/30						
Avocet	6	3/2	1,200	"	"					3,000
Black-necked stilt	2	4/16	75	"	"					85
Wilson's snipe	2	4/11	50	"	"					300
California gull	common	3/2	1,000	"	"					1500
Ring-billed gull			300	"	"					600
Franklin's gull	2	4/20	10	"	"					10
Forster's tern	1	4/16	8,000	"	"					12,000
Wilson's phalarope	1	4/15		"	"					50
Greater yellow-legs	1	4/10		4/20						

(over)

(1)	(2)		(3)	(4)	(5)			(6)
III. <u>Doves and Pigeons:</u>			300					
Mourning dove	common	4/16	300	4/30	resident			700
White-winged dove								
IV. <u>Predaceous Birds:</u>								
Golden eagle		resident			"			20
Duck hawk								
Horned owl		"						100
Magpie		"			"			1,000
Raven		"			"			100
Crow		"			"			200
Swainson's hawk	1	4/1			"			70
Red-tailed hawk		resident			"			60
American rough-leg	winter	resident			"			200
Ferruginous rough-leg	"	"						20
					Reported by <u>H. C. Erickson, Biologist</u>			

INSTRUCTIONS

- (1) Species: Use the correct names as found in the A.O.U. Checklist, 1931 Edition, and list group in A.O.U. order. Avoid general terms as "seagull", "tern", etc. In addition to the birds listed on form, other species occurring on refuge during the reporting period should be added in appropriate spaces. Special attention should be given to those species of local and National significance. Groups: I. Water and Marsh Birds (Gaviiformes to Ciconiiformes and Gruiformes)
 II. Shorebirds, Gulls and Terns (Charadriiformes)
 III. Doves and Pigeons (Columbiformes)
 IV. Predaceous Birds (Falconiformes, Strigiformes and predaceous Passeriformes)
- (2) First Seen: The first refuge record for the species for the season concerned.
- (3) Peak Numbers: The greatest number of the species present in a limited interval of time.
- (4) Last Seen: The last refuge record for the species during the season concerned.
- (5) Production: Estimated number of young produced based on observations and actual counts.
- (6) Total: Estimated total number of the species using the refuge during the period concerned.

UPLAND GAME BIRDS

1613

Refuge Malheur Months of January to April, 1947

(1) Species	(2) Density		(3) Young Produced		(4) Sex Ratio	(5) Removals			(6) Total	(7) Remarks
Common Name	Cover types, total acreage of habitat	Acres per Bird	Number broods obs'v'd.	Estimated Total	Percentage	Hunting	For Re- stocking	For Research	Estimated number using Refuge	Pertinent information not specifically requested. List introductions here.
Ring-necked pheasant					30% female		277*		4,000	
Valley quail									500	
Hungarian partridge									50	
Sage Hen									30	
										*These birds, largely cocks, were trapped and removed for restocking by the Oregon State Game Commission.

INSTRUCTIONS

Form NR-2 - UPLAND GAME BIRDS.*

- (1) SPECIES: Use correct common name.
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.). Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottomland hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) YOUNG PRODUCED: Estimated number of young produced, based upon observations and actual counts in representative breeding habitat.
- (4) SEX RATIO: This column applies primarily to wild turkey, pheasants, etc. Include data on other species if available.
- (5) REMOVALS: Indicate total number in each category removed during the report period.
- (6) TOTAL: Estimated total number using the refuge during the report period. This may include resident birds plus those migrating into the refuge during certain seasons.
- (7) REMARKS: Indicate method used to determine population and area covered in survey. Also include other pertinent information not specifically requested.

* Only columns applicable to the period covered should be used.

Refuge

Malheur

April 30, 194

750

(1) Species	(2) Density		(3) Removals					(4) Disposition of Fur						(5) Total Popula- tion
Common Name	Cover Types & Total Acreage of Habitat	Acres Per Animal	Hunting	Fur Harvest	Predator Control	For Re- stocking	For Research	Share Trapping			Total Refuge Furs Shipped	Refuge Income	Furs Donated	Furs Destroyed
								Permit Number	Trappers' Share	Refuge Share				
Taken by share trapper														
Muskrat	Malheur Lake, Unit 1			3490				T-2773	1745	1745	1745			
	" " Unit 2			2178				2784	1089	1089	1089			
	Unit 3			1651				2714	826	825	825			
	Unit 4			1906				2775	953	953	953			
	Unit 5			2000				2776	1000	1000	1000			
				1626				2777	813	813	813			
	Unit 6			1960				2787	981	980	980			
	Unit 7			2014				2786	1007	1007	1007			
	Blitzen Valley Unit			36				2787	18	18	18			
	Double O Ranch Unit			42				2785	21	21	21			
	Blitzen Valley Unit			1			Gov't. trapper			1	1			
Mink	Malheur Lake Unit			3					2	0	0			
	Blitzen Valley Unit			124				2787	62	62	62			
	Double O Ranch Unit			6				2785	3	3	3			
Weasel	Blitzen Valley Unit			6				2787	3	3	3			
Raccoon	Blitzen Valley Unit			10				2787	5	5	5			
Taken by refuge staff														
Beaver	Blitzen Valley Unit			34			Gov't. trapper		17	17	17			

REMARKS:

Totals:

Muskrat
Mink
Weasel
Raccoon
Beaver

16904
133
6
10
34

8453 8452 8452
67 65 65
3 3 3
5 5 5
17 17 17

(proceeds split w/
State of Oregon)

INSTRUCTIONS

Form NR-4 - SMALL MAMMALS (Include data on all species of importance in the management program; i.e., muskrats, beaver, coon, mink, coyote. Data on small rodents may be omitted except for estimated total population of each species considered in control operations.)

- (1) SPECIES: Use correct common name. Example: Striped skunk, spotted skunk, short-tailed weasel, gray squirrel, fox squirrel, white-tailed jackrabbit, etc. (Accepted common names in current use are found in the "Field Book of North American Mammals" by H. E. Anthony and the "Manual of the Vertebrate Animals of the Northeastern United States" by David Starr Jordan. "List of North American Recent Mammals" by G. S. Miller, Jr., a very good reference, is now out of print, although a revision is scheduled for publication in the near future.)
- (2) DENSITY: Applies particularly to those species considered in removal programs (public hunts, etc.) Detailed data may be omitted for species occurring in limited numbers. Density to be expressed in acres per animal by cover types. This information is to be prefaced by a statement from the refuge manager as to the number of acres in each cover type found on the refuge; once submitted, this information need not be repeated except as significant changes occur in the area of cover types. Cover types should be detailed enough to furnish the desired information but not so much as to obscure the general picture. Examples: spruce swamp, upland hardwoods, reverting agriculture land, bottom land hardwoods, short grass prairie, etc. Standard type symbols listed in Wildlife Management Series No. 7 should be used where possible. Figures submitted should be based on actual observations and counts on representative sample areas. Survey method used and size of sample area or areas should be indicated under Remarks.
- (3) REMOVALS: Indicate the total number under each category removed since April 30 of the previous year. Also show any removals not falling under heading listed.
- (4) DISPOSITION OF FUR: On share-trapped furs list the permit number, trapper's share, and refuge share. Indicate the number of pelts shipped to market and the total income to the refuge by species, including share-trapped furs and furs taken by Service personnel. Total number of pelts of each species destroyed because of unprimeness or damaged condition, and furs donated to institutions or other agencies should be shown in the column provided.
- (5) TOTAL POPULATION: Estimated total population of each species reported on as of April 30.
- REMARKS: Indicate inventory method(s) used, size of sample area(s), introductions, and any other pertinent information not specifically requested.

SALE OF TRAPPERS' FURS

<u>Permittee</u>	<u>Permit No.</u>	<u>Species</u>	<u>No. of Furs</u>	<u>Proceeds to Trapper</u>
Cox, Arthur	T-2786	Muskrat	1007	\$ 755.25
		Mink	1	10.00
Cox, Ira N.	T-2784	Muskrat	1089	819.75
Heinz, Percy	T-2774	Muskrat	826	563.04
Heinz, Roy	T-2775	Muskrat	953	668.83
McKenzie, Wm. H.	T-2785	Muskrat	21	16.35
		Mink	3	38.00
Meservey, Kenneth	T-2787	Muskrat	999	741.65
	(including amendment	Mink	62	739.50
	dated 1/10/50)	Weasel	3	3.75
		Raccoon	5	2.50
Moenpaa, Eino W.	T-2773	Muskrat	1745	1476.73
	(including amendment	Mink	1	1.50
	dated 1/10/50)			
Presley, Hilbert	T-2776	Muskrat	1000	723.55
Presley, Morgan	T-2777	Muskrat	813	577.52
TOTALS		MUSKRAT	8455	\$6,342.67
		MINK	67	789.00
		Weasel	3	3.75
		Raccoon	5	2.50

REFUGE GRAIN REPORT

Refuge Malheur

Months of January thru April 1947 50

(1) VARIETY	(2) ON HAND BEGINNING OF PERIOD	(3) RECEIVED DURING PERIOD	(4) TOTAL	(5) GRAIN DISPOSED OF			(6) ON HAND END OF PERIOD	(7) PROPOSED USE		
				TRANS- FERRED	SEEDED	FED		SEED	FEED	SURP.
Wheat	1040		1040		140	430	570	470	100	370
Barley	1600	480	2080			500	500	1530	500	1030
Oats	2052		2052		155	1083	1238	814		
Rye	50		140		100*		100	50	50	

- (8) Indicate shipping or collection points.....
- (9) Grain is stored at.....
- (10) Remarks *Previous report on rye estimated - 100 bu. seeded during period, estimated 50 bu. remaining.

NR-8a

REFUGE GRAIN REPORT

This report should cover all grain on hand, received, or disposed of, during the period covered by this narrative report.

Report all grain in bushels. For the purpose of this report the following approximate weights of grain shall be considered equivalent to a bushel: Corn (shelled)--55 lbs., Corn (ear)--70 lbs., Wheat--60 lbs., Barley--50 lbs., Rye--55 lbs., Oats--30 lbs., Soy Beans--60 lbs., Millet--50 lbs., Cowpeas--60 lbs., and Mixed--50 lbs. In computing volume of granaries, multiply the cubic contents (cu. ft.) by 0.8 bushels.

- (1) List each type of grain separately: Corn, wheat, proso millet, etc. Include only domestic grains; aquatic and other seeds will be listed on NR-9.
- (3) Report all grain received during period from all sources, such as transfer, share-cropping, or harvest from food patches.
- (4) A total of Columns 2 and 3.
- (6) Column 4 less Column 5.
- (7) This is a proposed breakdown by varieties of grain listed in Column 6.
- (8) Nearest railroad station for shipping and receiving.
- (9) Where stored on refuge: "Headquarters grainary", etc.
- (10) Indicate here the source of grain shipped in, destination of grain transferred, data on condition of grain, unusual uses proposed.